



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,701	08/31/2001	Jun Kawaguchi	M 6712 HST/NI PCT/US	1007
38857	7590	04/11/2006	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE, 46TH FLOOR PHILADELPHIA, PA 19103			ZHENG, LOIS L	
			ART UNIT	PAPER NUMBER

1742

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/914,701	<b>Applicant(s)</b> KAWAGUCHI ET AL.	
	<b>Examiner</b> Lois Zheng	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 27 October 2005.
- 2a)  This action is FINAL.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1,6-11,13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1,6-11,13 and 15-25 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a)  All    b)  Some \*    c)  None of:
1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Status of Claims*

1. The rejection of claims 1, 6-11, 13 and 15-23 are withdrawn in view of pre-appreal brief conference decision mailed 27 October 2005. New grounds of rejections follow.

Claims 13, 15-16, 19, 22-23 are amended in view of the amendment filed 17 February 2005. New claims 24-25 are added in view of the amendment. Therefore, claims 1, 6-11, 13 and 15-25 are currently under examination.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6-10, 13 and 15-17, 19-20, 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. US 6,235,180 B1(Kobayashi).

Kobayashi teaches a method and a composition for forming a phosphate protective film on steel surfaces by electrolysis(abstract, title). The coating electrolyte solution of Kobayashi comprises 2-60g/l zinc ions, 2-80g/l phosphoric acid ions, 3-100g/l nitric acid ions, wherein the ratio of zinc ions and phosphoric acid ions is 0.9-1.5. The coating temperature is 90°C or lower and the current density is 1-100A/dm<sup>2</sup>(col. 2 line 60 – col. 3 line 3). Kobayashi further teaches that the purpose of the invention is to

Art Unit: 1742

form an excellent quality phosphate coating on steel surfaces without generating any smut and any sludge(col. 2 lines 16-22).

Regarding claims 1, 6 and 22-25, the zinc, phosphoric acid, nitric acid and the ratio of zinc to phosphoric acid as taught by Kobayashi overlap the claimed zinc, phosphoric acid, nitric acid and zinc:phosphoric acid ratio as claimed. Therefore, the zinc concentration as taught by Kobayashi inherently overlaps the zinc concentration satisfying the claimed formulas. A prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed zinc, phosphoric acid, nitric acid concentration ranges and zinc:phosphoric acid ratio range from the disclosed range of Kobayashi would have been obvious to one skilled in the art since Kobayashi teaches the same utilities in its disclosed zinc, phosphoric acid, nitric acid concentration ranges and zinc:phosphoric acid ratio range.

Regarding claims 7, 13 and 15, the coating electrolyte solution can further contain nitrous acid, hydrogen peroxide and chloric acid in the amount of 0.05-0.18g/l(col. 6 lines 51-55), which overlap the claimed amount of nitrous acid, hydrogen peroxide and chloric acid. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed nitrous acid, hydrogen peroxide and chloric acid concentration range from the disclosed range of Kobayashi would have been obvious to one skilled in the art since Kobayashi teaches the same utilities in its disclosed nitrous acid, hydrogen peroxide and chloric acid concentration range.

Regarding claims 8, 16 and 19, Kobayashi teaches the claimed bringing the metal substrate into contact with the coating electrolyte solution and the coating

Art Unit: 1742

electrolyte solution is also in contact with a counter electrode(Fig.1). Kobayashi further teaches that the electrolysis process is cathodic(abstract). Therefore, the claimed electric current flow in a cathodizing direction through the metal substrate into the coating electrolyte solution and through the counter electrode is inherently taking place in the process of Kobayashi.

Regarding claims 9-10, 17 and 20, the coating temperature and the current density as taught by Kobayashi overlap the claimed coating temperature and the claimed current density. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed coating temperature and current density ranges from the disclosed ranges of Kobayashi would have been obvious to one skilled in the art since Kobayashi teaches the same utilities in its disclosed coating temperature and current density ranges.

4. Claims 11, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Yamamoto et al. US 4,517,030 (Yamamoto) and Bittner et al. US 5,152,849(Bittner).

The teachings of Kobayashi are discussed in paragraph 3 above. However, Kobayashi does not explicitly teach the claimed weakly basic aqueous colloidal solution that contains titanium oxide, titanium hydroxide and zinc phosphate.

Yamamoto teaches a process for activating steel surfaces prior to phosphating treatment by contacting the steel substrate with an aqueous activating solution(title, abstract). The activating solution of Yamamoto comprises titanium hydroxide and

Art Unit: 1742

titanium oxide(col. 3 lines 13-18) in order to accelerate subsequent phosphate coating and refine phosphate coating crystals(col. 1 lines 8-15).

Bittner teaches a phosphating process during which zinc phosphate is used as an activating agent to prepare the substrate to form a firmly adhering and finely crystalline phosphate layer during the succeeding phosphate coating process(col. 3 lines 22-32).

Therefore, it would have been obvious to one of ordinary skill in the art to have added zinc phosphate of Bittner to the activation solution of Yamamoto in order to improve the adherence of the subsequent phosphate coating as taught by Bittner.

In addition, it would have been obvious to one of ordinary skill in the art to have incorporated the activating step of Yamamoto in view of Bittner into the electrolytic phosphate coating process of Kobayashi in order to realize the benefits of accelerated and firmly adhering phosphate coating with refined coating crystals as taught by Yamamoto and Bittner.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248.

The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 for

Art Unit: 1742

submissions prior to July 15, 2005. The new fax number 571-273-8300 should be used for any submissions on or after July 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

ROY KING  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700